EPA/ROD/R09-90/052
1990

EPA Superfund
Record of Decision:

INTERSIL INC./SIEMENS COMPONENTS
EPA ID: CAD041472341
OU 01
CUPERTINO, CA
09/27/1990

- EXCAVATION OF AN ESTIMATED 40 CU. YDS. OF SOIL FROM THE SIEMENS ON-SITE AREA. THE SOIL WILL BE DISPOSED OF IN COMPLIANCE WITH RCRA LAND DISPOSAL RESTRICTIONS.

- OPERATION OF 23 SOIL VAPOR EXTRACTION WELLS (15 WELLS IN THE SIEMENS ON-SITE AREA AND 8 IN THE INTERSIL ON-SITE AREA) WITH TREATMENT BY CARBON ADSOPRTION.

- OPERATION OF 20 GROUND WATER EXTRACTION WELLS (13 WELLS IN THE SIEMENS ON-SITE AREA AND 7 WELLS IN THE INTERSIL ON-SITE AREA). EXTRACTED GROUND WATER WILL BE TREATED BY AIR STRIPPING AND DISCHARGED TO CALABAZAS CREEK UNDER AN NPDES PERMIT.

- OPERATION OF THREE GROUND WATER EXTRACTION WELLS IN THE OFFSITE AREA. EXTRACTED GROUND WATER WILL BE TREATED BY AIR STRIPPING AND DISCHARGED TO CALABAZAS CREEK UNDER AN NPDES PERMIT.

- CONTINUED MONITORING OF GROUND WATER AND SOIL TO VERIFY CONTAINMENT OF THE CONTAMINATED GROUND WATER AND ATTAINMENT OF CLEANUP LEVELS.

STATUTORY DETERMINATIONS

PROMULGATED MAXIMUM CONTAMINANT LEVEL GOALS (MCLGS) SERVE AS THE GROUND WATER CLEANUP STANDARDS FOR THOSE CHEMICALS OF CONCERN WITH MCLGS GREATER THAN ZERO. MCLGS ARE THE GROUND WATER CLEANUP STANDARDS FOR TWO CHEMICALS OF CONCERN AT INTERSIL/SIEMENS: 1,1-DCE AND 1,1,1-TCA. IN THESE TWO INSTANCES, THE CALIFORNIA ACTION LEVEL (AL) OR FEDERAL OR STATE MAXIMUM CONTAMINANT LEVEL (MCL) THAT HAS BEEN CHOSEN AS THE CLEANUP STANDARD IS EITHER EQUIVALENT TO OR MORE STRINGENT THAN THE FEDERAL MCLG.

THE SELECTED REMEDY IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT, COMPLIES WITH FEDERAL AND STATE REQUIREMENTS THAT ARE LEGALLY APPLICABLE OR RELEVANT AND APPROPRIATE TO THE REMEDIAL ACTION, AND IS COST-EFFECTIVE. THIS REMEDY UTILIZES PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE FOR THIS SITE, AND SATISFIES THE STATUTORY PREFERENCE FOR SELECTING REMEDIES THAT EMPLOY TREATMENT THAT REDUCES THE TOXICITY, MOBILITY, OR VOLUME OF THE HAZARDOUS SUBSTANCES. A REVIEW OF THE REMEDIAL ACTION WILL BE CONDUCTED EVERY FIVE YEARS AFTER COMMENCEMENT TO ENSURE THAT THE REMEDY CONTINUES TO PROVIDE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT.

DANIEL W. MCGOVERN
REGIONAL ADMINISTRATOR DATE: 09/27/90
EPA REGION IX

DECISION SUMMARY

THE US ENVIRONMENTAL PROTECTION AGENCY ("EPA") AND THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION ("REGIONAL BOARD"), HAVE WORKED TOGETHER TO SELECT THE REMEDY FOR THE INTERSIL/SIEMENS SITE. CONSEQUENTLY, PORTIONS OF THE DOCUMENTS BY WHICH THE REGIONAL BOARD HAS EMBODIED ITS SELECTION OF THE REMEDY UNDER STATE LAW REFLECT THE EFFORTS OF BOTH AGENCIES TO INVESTIGATE THE SITE, TO ASSESS THE RISKS WHICH IT POSES, AND TO EVALUATE AND COMPARE POSSIBLE REMEDIAL ALTERNATIVES. PARTICULARLY, CERTAIN PORTIONS OF ORDER NO. 90-119 WHICH WAS ADOPTED BY THE REGIONAL BOARD ON AUGUST 15, 1990, REFERRED TO HEREAFTER AS THE "ORDER," ACCURATELY SET FORTH THE VIEWS AND RATIONALE OF EPA. CONSEQUENTLY, THIS DECISION SUMMARY WILL REFER TO PORTIONS OF THOSE DOCUMENTS (BOTH ARE ATTACHED), AND BY SUCH REFERENCE THEY ARE THEREBY DEEMED TO BE INCORPORATED INTO THIS DECISION SUMMARY.

#SD
I. SITE DESCRIPTION

FINDING 1 OF THE ORDER DESCRIBES THE INTERSIL/SIEMENS SITE. REGIONAL AND SITE MAPS ARE FOUND IN APPENDIX C OF THIS RECORD OF DECISION ("ROD"). RESIDENTIAL NEIGHBORHOODS ARE WITHIN A FEW HUNDRED FEET NORTH AND SOUTH OF THE SITE, AND AN ORCHARD IS APPROXIMATELY 2000 FEET TO THE EAST. THERE ARE FIVE ACTIVE MONITORING WELLS WITHIN A ONE-MILE RADIUS OF THE SITE, THREE OF THEM DOWNGRADIENT.

#SHEA
II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

FINDINGS 3, 4, 11 AND 25 OF THE ORDER PROVIDE A HISTORY OF SITE ACTIVITIES AND STATE AND FEDERAL ENFORCEMENT ACTIVITIES AT THE INTERSIL/SIEMENS SITE.

#CPA
III. COMMUNITY PARTICIPATION ACTIVITIES

FINDING 22 OF THE ORDER DESCRIBES HOW THE PUBLIC PARTICIPATION REQUIREMENTS OF CERCLA SECTIONS 113 AND 117 WERE MET IN THE REMEDY SELECTION PROCESS. A RESPONSE TO COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD IS INCLUDED IN THE RESPONSIVENESS SUMMARY, WHICH IS PART OF THIS RECORD OF DECISION ("ROD").

#SRRA
IV. SCOPE AND ROLE OF RESPONSE ACTION

THE SELECTED REMEDY ADDRESSES THE PRINCIPAL THREATS POSED BY THE SITE, GROUND WATER AND SOIL CONTAMINATION FOR THE SIEMENS ON-SITE AREA, THE INTERSIL ON-SITE AREA, AND THE OFF-SITE AREA. FINDING 11 OF THE ORDER DESCRIBES INTERIM REMEDIAL ACTIONS AT THE SITE AND EVALUATES THEIR EFFECTIVENESS IN REMOVING AND TREATING CONTAMINATED GROUND WATER AND IN REDUCING CONTAMINANT MIGRATION TO GROUND WATER BY MEANS OF VAPOR EXTRACTION AND TREATMENT OF CONTAMINATED SOILS. THE SELECTED REMEDY WILL ADDRESS GROUND WATER CONTAMINATION IN THE A- AND B- ZONES ON-SITE AND IN THE BAND C-ZONES OFF-SITE. CONTAMINANTS REMOVED FROM BOTH SOIL AND GROUND WATER WILL BE CAPTURED AND PERMANENTLY DESTROYED, SIGNIFICANTLY REDUCING THE TOXICITY, MOBILITY OR VOLUME OF THE HAZARDOUS SUBSTANCES IN BOTH MEDIA.

#SSC
V. SUMMARY OF SITE CHARACTERISTICS

FINDINGS 5 THROUGH 10 OF THE ORDER DESCRIBE SITE HYDROGEOLOGICAL CONDITIONS AND THE NATURE AND EXTENT OF ORGANIC CHEMICAL CONTAMINATION IN SOIL AND GROUND WATER AT THE INTERSIL/SIEMENS SITE.

#SSR
VI. SUMMARY OF SITE RISKS

EPA POLICY AND GUIDANCE REQUIRE THAT THE POTENTIAL RISK TO HUMAN HEALTH AND THE ENVIRONMENT BE EVALUATED UNDER A NO-ACTION SCENARIO. THIS SCENARIO ASSUMES UNRESTRICTED ACCESS TO SITE CONTAMINANTS (INCLUDING SOILS AND GROUND WATER) AND ASSUMES THAT ALL ON-GOING TREATMENT AND/OR MITIGATION MEASURES ARE TERMINATED IMMEDIATELY. THE INFORMATION PROVIDED BY THE BASELINE RISK ASSESSMENT IS THEN USED TO CHARACTERIZE THE CURRENT AND POTENTIAL THREATS POSED BY THE SITE TO

HUMAN HEALTH AND THE ENVIRONMENT.

NO EXPOSURE PATHWAYS WITH AN EXCESS CANCER RISK NUMBER (ECRN) GREATER THAN THE (10-4) TO (10-6) RANGE OR A NON-CARCINOGENIC HAZARD INDEX (HI) GREATER THAN 1 WERE IDENTIFIED UNDER CURRENT SITE CONDITIONS. TABLE 1 PRESENTS ON-SITE AND OFF-SITE PATHWAY EXPOSURES UNDER FUTURE USE SCENARIOS.

FINDING 12 OF THE ORDER SUMMARIZES THE RESULTS OF THE BASELINE RISK ASSESSMENT. THIS SECTION ALSO DISCUSSES THE ASSUMPTIONS USED IN THE EXPOSURE ASSESSMENT.

NO CRITICAL HABITATS OR ENDANGERED SPECIES WERE IDENTIFIED FOR THE INTERSIL/SIEMENS SITE. THE POTENTIAL FOR MIGRATION OF CONTAMINANTS VIA SURFACE RUNOFF TO CALABAZAS CREEK IS MINIMAL. TREATED GROUND WATER FROM THE ON-SITE TREATMENT UNITS IS DISCHARGED TO THE CREEK AS REGULATED BY NPDES PERMIT. THE POTENTIAL FOR FUTURE ECOLOGICAL IMPACTS AT THIS SITE IS DETERMINED TO BE LOW.

#SA

VII. SUMMARY OF ALTERNATIVES

IN ACCORDANCE WITH CERCLA SECTION 121, THE NATIONAL CONTINGENCY PLAN ("NCP"), AND THE INTERIM GUIDANCE ON THE SUPERFUND SELECTION OF REMEDY, DECEMBER 24, 1986 (OSWER DIRECTIVE 9355.0-10), A RANGE OF SOIL AND GROUND WATER REMEDIATION OPTIONS FOR THE INTERSIL/SIEMENS SITE WAS DEVELOPED AND INITIALLY SCREENED ON THE BASIS OF EFFECTIVENESS, IMPLEMENTABILITY AND RELATIVE COST. NEXT, A DETAILED ANALYSIS OF THE REMAINING ALTERNATIVES IN RELATION TO NINE EVALUATION CRITERIA WAS CONDUCTED. FINDING 14 OF THE ORDER IDENTIFIES THE NINE EVALUATION CRITERIA AND FINDING 13 PROVIDES A DESCRIPTION OF THE PROPOSED ALTERNATIVES.

ALTHOUGH THE INTERSIL AND SIEMENS FACILITIES ARE LISTED AS ONE SITE ON THE NATIONAL PRIORITIES LIST, EACH COMPANY COMPLETED ITS OWN RI/FS AND JOINTLY COMPLETED AN OFF-SITE RI/FS. FOR THIS REASON, A SEPARATE SERIES OF ALTERNATIVES WAS DEVELOPED FOR THE SIEMENS ON-SITE, INTERSIL ON-SITE, AND OFF-SITE AREAS. THE ALTERNATIVES FOR EACH AND THEIR ASSOCIATED COSTS ARE AS FOLLOWS:

SIEMENS ON-SITE ALTERNATIVES	
1) NO ACTION	$2,880,000
2) GROUND WATER EXTRACTION/TREATMENT (9 WELLS) AND SOIL VAPOR EXTRACTION/ TREATMENT (15 WELLS)	4,870,000
3) GROUND WATER EXTRACTION/TREATMENT (13 WELLS) AND SOIL VAPOR EXTRACTION/ TREATMENT (15 WELLS)	5,030,000
4) SAME AS #3 WITH SOIL EXCAVATION AND DISPOSAL OF APPROXIMATELY 40 CU. YDS. OF SOIL	5,660,000
5) SAME AS #4 WITH 7 ADDITIONAL SOIL VAPOR EXTRACTION WELLS	6,360,000
INTERSIL ON-SITE ALTERNATIVES	
1) NO ACTION	$4,000,000
2) EXISTING GROUND WATER EXTRACTION/ TREATMENT (5 WELLS) AND SOIL VAPOR EXTRACTION/TREATMENT (4 WELLS)	9,800,000.
3) GROUND WATER EXTRACTION/TREATMENT (7 WELLS) AND SOIL VAPOR EXTRACTION/ TREATMENT (12 WELLS)	10,100,000
4) SAME AS #3 WITH ON-SITE REINJECTION OF TREATED GROUND WATER	10,700,000

5) SAME AS #2 WITH THE ADDITION OF ON-SITE GROUND WATER REINJECTION, SOIL EXCAVATION AND ON-SITE AERATION, AND A SLURRY WALL	37,300,000
6) SAME AS 13 WITH MORE STRINGENT GROUND WATER CLEANUP TO VOC BACKGROUND LEVELS	10,600,000
OFF-SITE ALTERNATIVES	
1) NO ACTION	$1,220,000
2) GROUND WATER EXTRACTION/TREATMENT FROM ONE B-ZONE WELL	2,120,000
3) GROUND WATER EXTRACTION/TREATMENT FROM THREE B-ZONE EXTRACTION WELLS WITH CONTINGENCY FOR ONE C-ZONE WELL	2,990,000
4) GROUND WATER EXTRACTION/TREATMENT FROM TWO B-ZONE AND ONE C-ZONE WELLS	2,650,000
5) GROUND WATER EXTRACTION/TREATMENT FROM TWO B-ZONE AND TWO C-ZONE WELLS	2,810,000
6) SAME AS 15 WITH MORE STRINGENT GROUND WATER CLEANUP TO VOC BACKGROUND LEVELS	2,960,000

ALL OF THE ALTERNATIVES, EXCEPT THE NO ACTION ALTERNATIVES, INCLUDE CONTINUING SHALLOW ZONE AND DEEPER AQUIFER GROUND WATER AND SOIL MONITORING. FOR ALL OF THE TREATMENT ALTERNATIVES, EXCEPT THE NO ACTION ALTERNATIVES, GROUND WATER IS TREATED BY AIR STRIPPING WITH SUBSEQUENT DISCHARGE TO CALABAZAS CREEK UNDER NPDES PERMIT. SOIL VAPOR TREATMENT IS BY CARBON ADSORPTION.

#CA
VIII. COMPARISON OF ALTERNATIVES

THIS PORTION OF THE ROD PRESENTS A COMPARISON OF THE ALTERNATIVES USING THE NINE EVALUATION CRITERIA: PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT; COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS ("ARARS"); LONG-TERM EFFECTIVENESS AND PERMANENCE; REDUCTION OF TOXICITY, MOBILITY OR VOLUME THROUGH TREATMENT; SHORT-TERM EFFECTIVENESS; IMPLEMENTABILITY; COST; SUPPORT AGENCY ACCEPTANCE; AND COMMUNITY ACCEPTANCE.

ALTHOUGH THE PROPOSED ALTERNATIVES FOR EACH OF THE THREE AREAS ARE PRESENTED SEPARATELY, THEY ARE COMPARABLE IN THAT THEY REPRESENT VARIATIONS OF SIMILAR BASIC TREATMENT ELEMENTS. HOWEVER, BECAUSE THE RI/FS REPORTS WERE PREPARED SEPARATELY, THE ALTERNATIVES HAVE BEEN EVALUATED SEPARATELY. TABLE 2 (SIEMENS ON-SITE), TABLE 3 (INTERSIL ON-SITE) AND TABLE 4 (OFF-SITE) SUMMARIZE THE RESULTS OF THE DETAILED ANALYSIS OF ALTERNATIVES.

#TSR
IX. THE SELECTED REMEDY

IN GENERAL TERMS, THE SELECTED REMEDY FOR THE ENTIRE INTERSIL/SIEMENS ON-SITE AND OFF-SITE AREAS CONSISTS OF:

- SOIL VAPOR EXTRACTION AND TREATMENT FOR SOIL CLEANUP (WITH SOIL EXCAVATION AND DISPOSAL AT THE SIEMENS ON-SITE AREA)
- GROUND WATER EXTRACTION AND TREATMENT FOR GROUND WATER CLEANUP
- SHALLOW ZONE AND DEEPER AQUIFER GROUND WATER MONITORING AND SOIL MONITORING

SPECIFICALLY, THE SELECTED REMEDY FOR EACH AREA AT THE SITE IS AS FOLLOWS:

SIEMENS ON-SITE AREA: THE SELECTED REMEDY FOR THE SIEMENS ON-SITE AREA IS ALTERNATIVE 4, WHICH CONSISTS OF EXPANDED GROUND WATER EXTRACTION AND TREATMENT, SOIL VAPOR EXTRACTION AND TREATMENT, AND SOIL EXCAVATION. THERE WILL BE A TOTAL OF TEN A-ZONE AND THREE B-ZONE GROUND WATER EXTRACTION WELLS. THERE WILL BE A TOTAL OF 15 SOIL VAPOR EXTRACTION WELLS. THE SELECTED REMEDY ALSO INCLUDES EXCAVATION OF APPROXIMATELY 40 CU. YDS. OF CONTAMINATED SOIL TO A DEPTH OF APPROXIMATELY 40 FEET IN THE AREAS OF FORMER TANKS 1 AND 3 TO REMOVE SOILS CONTAINING SEMI-VOLATILE ORGANIC COMPOUNDS (SOCS). THE SOIL WILL BE DISPOSED OF IN COMPLIANCE WITH RCRA LAND DISPOSAL RESTRICTIONS (LDRS). THE ESTIMATED TIME TO ACHIEVE GROUND WATER CLEANUP IS 45 - 85 YEARS; THE ESTIMATED TIME TO ACHIEVE SOIL CLEANUP IS APPROXIMATELY 11 YEARS.

INTERSIL ON-SITE AREA: THE SELECTED REMEDY FOR THE INTERSIL ON-SITE AREA IS ALTERNATIVE 3, WHICH CONSISTS OF EXPANDED GROUND WATER EXTRACTION AND TREATMENT IN THE A- AND B-ZONE AND EXPANDED SOIL VAPOR EXTRACTION AND TREATMENT. THERE WILL BE A TOTAL OF TEN A-ZONE AND ONE B-ZONE GROUND WATER EXTRACTION WELLS AND EIGHT SOIL VAPOR EXTRACTION WELLS. THE ESTIMATED TIME TO ACHIEVE GROUND WATER CLEANUP IS 60 YEARS; THE ESTIMATED TIME TO ACHIEVE SOIL CLEANUP IS FIVE YEARS.

OFF-SITE AREA: THE SELECTED REMEDY FOR THE INTERSIL/SIEMENS OFF-SITE AREA IS ALTERNATIVE 3, WHICH CONSISTS OF GROUND WATER EXTRACTION FROM THREE B-ZONE EXTRACTION WELLS AND TREATMENT. C-ZONE GROUND WATER WILL BE CAPTURED BY PUMPING OF THE B-ZONE WELLS. IF C-ZONE VOC CONCENTRATIONS DO NOT SHOW A REDUCTION DURING THE FIRST ONE-YEAR PERIOD AND/OR SUFFICIENT C-ZONE CAPTURE IS NOT DEMONSTRATED, A C-ZONE MONITORING WELL WILL BE CONVERTED INTO A C-ZONE EXTRACTION WELL. THE ESTIMATED TIME TO ACHIEVE GROUND WATER CLEAN UP IS 20 - 45 YEARS.

FOR THE THREE AREAS, GROUND WATER TREATMENT WILL BE ACCOMPLISHED BY AIR STRIPPING WITH SUBSEQUENT DISCHARGE TO CALABAZAS CREEK UNDER NPDES PERMIT. FOR THE SIEMENS ON-SITE AREA AND THE OFF-SITE AREA, THERE MAY BE PARTIAL REUSE AND RECLAMATION OF TREATED WATER. SOIL VAPOR TREATMENT WILL BE ACCOMPLISHED THROUGH CARBON ADSORPTION. REGULAR GROUND WATER AND SOIL VAPOR MONITORING WILL BE CONDUCTED.

THE SELECTED REMEDY FOR EACH AREA IS DESCRIBED IN MORE DETAIL IN FINDING 15.1 - 15.3 OF THE ORDER.

THE GOAL OF THIS REMEDIAL ACTION IS TO RESTORE GROUND WATER TO ITS BENEFICIAL USE. BASED ON THE INFORMATION OBTAINED DURING THE REMEDIAL INVESTIGATION AND ON A CAREFUL ANALYSIS OF ALL REMEDIAL ALTERNATIVES, EPA AND THE STATE OF CALIFORNIA BELIEVE THAT THE SELECTED REMEDY WILL ACHIEVE THIS GOAL. IT MAY BECOME APPARENT, DURING IMPLEMENTATION OR OPERATION OF THE GROUND WATER EXTRACTION SYSTEM AND ITS MODIFICATIONS, THAT CONTAMINANT LEVELS HAVE CEASED TO DECLINE AND ARE REMAINING CONSTANT AT LEVELS HIGHER THAN THE REMEDIATION GOAL OVER SOME PORTION OF THE CONTAMINATED PLUME. IN SUCH A CASE, THE SYSTEM PERFORMANCE STANDARDS AND/OR THE REMEDY MAY BE REEVALUATED.

THE PERFORMANCE OF THE GROUND WATER EXTRACTION AND TREATMENT SYSTEM WILL BE CAREFULLY MONITORED ON A REGULAR BASIS AND ADJUSTED AS WARRANTED BY THE PERFORMANCE DATA COLLECTED DURING OPERATION. MODIFICATIONS MAY INCLUDE:

A) AT INDIVIDUAL WELLS WHERE CLEANUP STANDARDS HAVE BEEN ATTAINED, PUMPING MAY BE DISCONTINUED;

B) ALTERNATIVE PUMPING AT WELLS TO ELIMINATE STAGNATION POINTS;

C) PULSE PUMPING TO ALLOW AQUIFER EQUILIBRATION AND TO ALLOW ADSORBED CONTAMINANTS TO PARTITION INTO GROUND WATER; AND

D) INSTALLATION OF ADDITIONAL EXTRACTION WELLS TO FACILITATE OR ACCELERATE CLEANUP OF THE CONTAMINANT PLUME.

CHEMICAL-, LOCATION-, AND ACTION-SPECIFIC ARARS IDENTIFIED FOR THE INTERSIL/SIEMENS SITE INCLUDE:

FEDERAL: SAFE DRINKING WATER ACT, CLEAN AIR ACT, RCRA (LAND DISPOSAL RESTRICTIONS), CLEAN WATER ACT

STATE: PORTER COLOGNE WATER QUALITY ACT, SAFE DRINKING WATER ACT, CLEAN AIR ACT, CALIFORNIA HAZARDOUS WASTE CONTROL LAW, STATE BOARD RESOLUTION 68-16, STATE BOARD RESOLUTION 88-63 AS INCORPORATED IN THE WATER QUALITY CONTROL PLAN FOR SAN FRANCISCO BASIN PLAN

LOCAL: BAY AIR AIR QUALITY MANAGEMENT DISTRICT (BAAQMD) REGULATION 8, RULE 47 ("AIR STRIPPER AND SOIL VAPOR EXTRACTION' OPERATIONS") AND BAAQMD REGULATION 8, RULE 40 ("AERATION OF CONTAMINATED SOIL AND REMOVAL OF UNDERGROUND STORAGE TANKS")

TBCS FOR THE INTERSIL/SIEMENS SITE INCLUDE OSWER DIRECTIVE 9355.0-28 ("CONTROL OF AIR EMISSIONS FROM SUPERFUND AIR STRIPPERS AT SUPER FUND GROUNDWATER SITES").

CLEANUP STANDARDS

FINDINGS 15.1 - 15.3 AND 18 OF THE ORDER INCLUDE A DISCUSSION OF CLEANUP STANDARDS FOR EACH AREA. FOR EACH, GROUND WATER CLEANUP STANDARDS ARE FEDERAL OR STATE MAXIMUM CONTAMINANT LEVELS (MCLS) OR CALIFORNIA DEPARTMENT OF HEALTH SERVICES (DHS) RECOMMENDED

DRINKING WATER ACTION LEVELS (RDWALS). SPECIFICATION B.4 OF THE ORDER PRESENTS GROUND WATER CLEANUP STANDARDS FOR ALL CHEMICALS OF CONCERN AT THE INTERSIL/SIEMENS SITE.

PROMULGATED MCLGS SERVE AS THE GROUND WATER CLEANUP STANDARDS FOR THOSE CHEMICALS OF CONCERN WITH MCLGS GREATER THAN ZERO. MCLGS ARE THE GROUND WATER CLEANUP STANDARDS FOR TWO CHEMICALS OF CONCERN AT THE INTERSIL/SIEMENS SITE: 1,1-DICHLOROETHENE (1,1-DCE) AND 1,1,1-TRICHLOROETHANE (1,1,1-TCA). IN THESE TWO INSTANCES, THE CALIFORNIA RDWAL OR FEDERAL OR STATE MCL THAT HAS BEEN CHOSEN AS THE CLEANUP STANDARD IS EITHER EQUIVALENT TO OR MORE STRINGENT THAN THE FEDERAL MCLG. A CONSERVATIVE REMEDIATION STANDARD OF 1 PPM TOTAL VOCS AND 10 PPM TOTAL SOCS HAS BEEN SET FOR SOIL CONTAMINATION.

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X. STATUTORY DETERMINATIONS

IN ACCORDANCE WITH CERCLA SECTION 121, THE SELECTED REMEDIAL ACTION FOR EACH AREA AT THE INTERSIL/SIEMENS SITE IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT, COMPLIES WITH ARARS, IS COST EFFECTIVE, AND UTILIZES PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT POSSIBLE. IN ADDITION, THE SELECTED REMEDIES SATISFY THE STATUTORY PREFERENCE FOR REMEDIES EMPLOYING TREATMENT THAT REDUCES TOXICITY, MOBILITY OR VOLUME AS A PRINCIPAL ELEMENT.

UNDER EACH AREA'S CHOSEN REMEDY, FUTURE RISKS AT THE SITE FALL WITHIN THE (10-4) TO (10-6) CARCINOGENIC RISK RANGE AND THE LESS-THAN-ONE HAZARD INDEX FOR ALL EXPOSURE PATHWAYS. ON-SITE SOIL WILL BE REMEDIATED TO A LEVEL THAT WILL PROTECT ON-SITE AND OFF-SITE GROUND WATER FROM FURTHER CONTAMINATION BY CHEMICALS PRESENTLY IN THE SOILS. THE SELECTED REMEDIES COMPLY WITH FEDERAL AND STATE ARARS. BOTH SOIL VAPOR EXTRACTION AND AIR STRIPPER EMISSIONS WILL MEET THE REQUIREMENTS OF THE BAAQMD REGULATION 8, RULE 47 AND OSWER DIRECTIVE 9355.0-28. IMPLEMENTATION OF THE REMEDIES WILL CAUSE NO UNACCEPTABLE SHORT-TERM RISKS OR CROSS-MEDIA IMPACTS.

TREATMENT IS USED AS A PRINCIPAL ELEMENT FOR THE SELECTED REMEDIES. SOIL VAPOR EXTRACTION AND TREATMENT AND GROUND WATER EXTRACTION AND TREATMENT ARE PERMANENT SOLUTIONS AND SIGNIFICANTLY REDUCE CONTAMINANT TOXICITY, MOBILITY AND VOLUME AT THE SITE. THE SELECTED REMEDIAL ACTIONS ARE THE MOST COST-EFFECTIVE. ALTHOUGH THE SELECTED REMEDIES' TIMES TO REACH CLEANUP ARE NOT THE SHORTEST, THEY DO AVOID SHORT-TERM RISKS ASSOCIATED WITH THE SHORTER CLEANUP TIME ALTERNATIVES.

FINDING 16 OF THE ORDER PROVIDES AN EXPLANATION OF HOW THE SELECTED REMEDIES SATISFY EACH OF THE STATUTORY REQUIREMENTS. FINDING 19 OF THE ORDER SPECIFICALLY ADDRESSES HOW THE SELECTED REMEDIES PROTECT THE PUBLIC HEALTH.

LAND DISPOSAL RESTRICTIONS

CERCLA RESPONSE ACTIONS MUST COMPLY WITH RCRA LAND DISPOSAL RESTRICTIONS (LDRS) WHEN THEY ARE DETERMINED TO BE ARARS. CURRENT EPA GUIDANCE DIRECTS THAT LDRS ARE NOT RELEVANT AND APPROPRIATE FOR SOIL AND DEBRIS WASTES AT THIS TIME. IN ORDER FOR RCRA LDRS TO BE APPLICABLE TO SOIL AND DEBRIS WASTES, THE CERCLA RESPONSE ACTION MUST CONSTITUTE PLACEMENT OF A RESTRICTED RCRA HAZARDOUS WASTE.

THE SELECTED REMEDY FOR THE SIEMENS ON-SITE AREA SOIL INCLUDES EXCAVATION OF A TOTAL OF APPROXIMATELY 40 CU. YDS. OF SOIL FROM TWO SEPARATE LOCATIONS, THE SITES OF FORMER TANKS 1 AND 3. THE REMEDIAL INVESTIGATION IDENTIFIED TWO SOCS AT CONCENTRATIONS GREATER THAN 10 PPM (1,2,4-TRICHLOROBENZENE (1,2,4-TCB) AND PHENOL) AT THE TWO FORMER TANK LOCATIONS. ALTHOUGH SOIL VAPOR EXTRACTION WITH TREATMENT BY CARBON ADSORPTION WILL BE PERFORMED AT THESE TWO LOCATIONS, SOCS ARE NOT READILY AMENABLE TO TREATMENT BY THIS METHOD. SOIL VAPOR EXTRACTION IS EXPECTED TO REDUCE CONCENTRATIONS TO THE SOIL VOC CLEANUP STANDARD OF 1 PPM, BUT IS NOT EXPECTED TO REDUCE SOC CONCENTRATIONS TO THE SOIL SOC CLEANUP STANDARD OF 10 PPM.

NEITHER 1,2,4-TCB NOR PHENOL ARE LISTED OR CHARACTERISTIC RCRA HAZARDOUS WASTES. HOWEVER, THE SOIL THAT WILL BE EXCAVATED AND DISPOSED CONTAINS SPENT SOLVENTS (E.G., XYLENES), WHICH ARE RESTRICTED RCRA HAZARDOUS WASTES. AS SUCH, THEY WOULD BE SUBJECT TO LDRS AND WOULD HAVE TO MEET TREATMENT STANDARDS (EFFECTIVE DATE NOVEMBER 8, 1990) BEFORE THE SOIL COULD BE EXCAVATED AND DISPOSED OF OFF-SITE. (METALS IN THE SOIL WERE ALSO DETERMINED TO BE NEITHER LISTED NOR CHARACTERISTIC RCRA HAZARDOUS WASTES).

THE SOIL VOC CLEANUP STANDARD OF 1 PPM WILL REDUCE CONCENTRATIONS WELL BELOW REQUIRED LDR TREATMENT STANDARDS. IF THESE VOC CLEANUP STANDARDS CANNOT BE MET, IT WILL BE NECESSARY TO OBTAIN A SOIL AND DEBRIS TREATABILITY VARIANCE IN ORDER TO COMPLY WITH LDRS.

#RS

REVISED RESPONSIVENESS SUMMARY
INTERSIL/SIEMENS PROPOSED SUPERFUND SITE
CUPERTINO, SANTA CLARA COUNTY

INTRODUCTION

THIS REVISED RESPONSIVENESS SUMMARY REVIEWS COMMENTS AND QUESTIONS RECEIVED THROUGH AUGUST 6, 1990 REGARDING THE PROPOSED REMEDIAL ACTION PLAN (RAP)) FOR THE INTERSIL/SIEMENS PROPOSED SUPERFUND SITE THE RAP CONSISTS OF EXPANDED SOIL VAPOR EXTRACTION AND TREATMENT EXPANDED GROUNDWATER EXTRACTION AND TREATMENT AND LIMITED SOIL EXCAVATION. THE RAP IS FORMALLY PRESENTED IN THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) REPORTS, THE PROPOSED PLAN FACT SHEET (DATED JUNE 1990) AND THE PROPOSED FINAL SITE CLEANUP ORDER (SCO) FOR THE SITE. THE PUBLIC COMMENT PERIOD ON THE RI/FS, THE PROPOSED PLAN FACT SHEET AND THE SCO WAS FROM JUNE 13,1990 TO JULY 13, 1990. THE BOARD HELD A PUBLIC HEARING ON THE RAP AND SCO DURING ITS JUNE 20, 1990 MEETING. INTERSIL AND SIEMENS HAVE COMMENTED IN WRITING TWICE ON THE SCO. AMI, THE DEPARTMENT OF HEALTH SERVICES: OFFICE OF DRINKING WATER (ODW), THE CITY OF SANTA CLARA AND THE SANTA CLARA VALLEY WATER DISTRICT (SCVWD) ALSO COMMENTED ON THE SCO. ONE NEARBY HOMEOWNER ASKED SIMILAR QUESTIONS COVERED IN THE PUBLIC MEETINGS, THE LETTER AND RESPONSE LETTER ARE ATTACHED ONE NEARBY HOMEOWNER SUBMITTED A LETTER (ATTACHED) SUGGESTING THAT INTERSIL AND SIEMENS SHOULD POST A BOND LARGE ENOUGH TO COVER THE COSTS OF CLEANUP. THIS IS DISCUSSED IN THE REGULATORY OVERSIGHT SECTION NO OTHER WRITTEN COMMENTS WERE RECEIVED DURING THE COMMENT PERIOD, NOR WAS THERE ANY REQUESTS FOR A TIME EXTENSION. FOUR LETTERS OF COMMENT AND/NOR QUESTION WERE RECEIVED AFTER THE CLOSE OF THE PERIOD THE FOUR LETTERS OF COMMENTS INCLUDE FURTHER EXPLANATION BY ODW ON THEIR EARLIER COMMENTS; LETTERS WITH SIMILAR COMMENTS AS ODW'S FROM THE CITY OF SANTA CLARA AND THE SCVWD; AND A RESPONSE FROM INTERSIL TO THE JULY 11 ODW COMMENTS. ALL COMMENTS, INCLUDING THE LAST FOUR LETTERS OF COMMENT ARE RESPONDED TO IN THIS REVISED RESPONSIVENESS SUMMARY.

DURING THE COMMUNITY MEETING THAT TOOK PLACE IN SANTA CLARA ON JUNE 21,1990, COMMUNITY MEMBERS ORALLY ASKED NUMEROUS QUESTIONS REGARDING THE SITE HISTORY AND EFFECTS AS WELL AS DETAILS ON THE RI/FS AND RAP. THE AUDIENCE HAD TWO SIGNIFICANT COMMENTS/QUESTIONS ON THE RAP CONCERNING (1) THE LENGTH OF TIME TO ACHIEVE CLEANUP OF 45 TO 85 YEARS WAS TOO LONG AND THAT METHODS TO SHORTEN THE TIME TO CLEANUP SHOULD BE REEVALUATED AND (2) WHO WAS GOING TO PROVIDE REGULATORY OVERSIGHT FOR THE LENGTHY CLEANUP.

THE SUMMARY OF THE SIGNIFICANT COMMENTS AND RESPONSE TO THOSE COMMENTS ARE SUMMARIZED BELOW. A RECENT EPA MEMO ESTABLISHED A TWO PART APPROACH TO RESPONSIVENESS SUMMARIES. THIS DOCUMENT IS PRESENTED IN ONE PART BECAUSE REGIONAL BOARD STAFF BELIEVE AT THIS TIME THAT THE ISSUES AND RESPONSES ARE SUCCINCT ENOUGH THAT A TWO PART APPROACH IS NOT WARRANTED

THE ADMINISTRATIVE RECORD FOR THE SITE IS AVAILABLE AT THE SUNNYVALE PUBLIC LIBRARY AND AT THE REGIONAL BOARD OFFICES.

COMMUNITY RELATIONS ACTIVITIES

THE MAJOR COMMUNITY RELATIONS ACTIVITIES ARE LISTED BELOW:

JULY 1989	FACT SHEET NO. 1
SEPTEMBER 1989	COMMUNITY MEETING NO. 1
JANUARY 1990	FACT SHEET NO. 2, ANSWERS TO QUESTIONS FROM PUBLIC
JUNE 1990	FACT SHEET NO. 3, COMMUNITY MEETING NO. 2

LOCAL COMMUNITY COMMENTS

SIGNIFICANT ISSUES AND CONCERNS:

GENERAL:

NUMEROUS QUESTIONS WERE ASKED DURING THE COMMUNITY MEETING REGARDING THE SITE HISTORY, SITE INVESTIGATION, EXTENT OF SOIL AND GROUNDWATER POLLUTION, BASELINE PUBLIC HEALTH EVALUATION, PERFORMANCE OF INTERIM REMEDIAL ACTIONS AND THE PROPOSED RAP. THESE QUESTIONS WERE ALL ANSWERED

AT THE COMMUNITY MEETING, IN FACT SHEET NO. 2, ANSWERS TO QUESTIONS FROM PUBLIC, AND IN THE PROPOSED PLAN FACT SHEET NO. 3. A SURVEY OF THE PEOPLE ATTENDING THE JUNE 21,1990 COMMUNITY MEETING SHOWED THAT ONLY THREE PEOPLE IN ATTENDANCE HAD ALSO ATTENDED THE SEPTEMBER 1989 COMMUNITY MEETING. MOST OF THE QUESTIONS ASKED DURING THE JUNE COMMUNITY MEETING WERE SIMILAR TO QUESTIONS ASKED DURING THE SEPTEMBER COMMUNITY MEETING. ANSWERS TO THESE QUESTIONS WERE PROVIDED AT THE JUNE COMMUNITY MEETING AND WERE DOCUMENTED IN FACT SHEET NO. 2. ONE LETTER WAS RECEIVED FROM A NEARBY HOMEOWNER WITH QUESTIONS SIMILAR TO THOSE AT THE COMMUNITY MEETING REGARDING THE SITE INVESTIGATION AND CLEANUP AND THESE QUESTIONS WERE ANSWERED BY LETTER. THIS COMMENT LETTER AND STAFF RESPONSE LETTER BACK ARE INCLUDED AS AN ATTACHMENT

TIME TO ACHIEVE CLEANUP LEVELS:

THE MOST SIGNIFICANT QUESTION/CONCERN THAT AROSE DURING THE PUBLIC MEETING WAS WHY DOES IT TAKE SO LONG TO ACHIEVE CLEANUP AND IS THERE ANY ADDITIONAL WORK THAT COULD BE DONE TO SHORTEN THE TIME NECESSARY FOR CLEANUP.

THE TIME TO ACHIEVE CLEANUP LEVELS FOR THE PROPOSED ALTERNATIVES IS PRESENTED IN THE FOLLOWING TABLE.

TIME TO ACHIEVE CLEANUP LEVELS (YEARS)

	SIEMENS ON-SITE	INTERSIL ON-SITE	OFF-SITE
SOIL	11	5	N/A
GROUNDWATER	45-85	60	20-45

SOIL CLEANUP TIMES ARE RELATIVELY SHORT WHEN COMPARED TO GROUNDWATER CLEANUP TIMES. VOLATILE ORGANIC COMPOUNDS (VOCS) SUCH AS TRICHLOROETHENE (TCE), THE MAIN CHEMICAL OF CONCERN AT THE SITES, ARE EXTRACTED MUCH QUICKER WHEN THEY EXIST IN SOIL IN A VAPOR STATE RATHER THAN WHEN THE VOCS ARE DISSOLVED IN GROUNDWATER. WHEN VOCS ARE DISSOLVED IN GROUNDWATER, THE VOCS ADSORB OR ATTACH TO THE SOIL PARTICLES WHERE THE GROUNDWATER IS PRESENT AND BECOME TRAPPED INSIDE OPENINGS NOR CREVICES ON THE SOIL PARTICLES, AND IT BECOMES VERY DIFFICULT TO REMOVE THE ADSORBED VOCS. AS GROUNDWATER IS PUMPED FROM A CONTAMINATED AQUIFER, VOCS SLOWLY DESORB OR DETACH FROM THE SOIL PARTICLES AND ARE EXTRACTED WITH THE GROUNDWATER. WITHIN LIMITS THIS PROCESS MAY BE SPEEDED UP BY PUMPING AT A HIGHER FLOW RATE; HOWEVER, DUE TO THE LIMITING FACTORS OF DESORPTION, A POINT OF DECREASING VOC REMOVAL WILL BE REACHED SO THAT ANY ADDITIONAL PUMPING RATE INCREASES WILL NOT SHORTEN THE CLEANUP TIME.

ON-SITE AREAS

THE SHALLOWEST GROUNDWATER ZONE BENEATH INTERSIL AND SIEMENS, THE A-ZONE, HAS A VERY LOW PERMEABILITY (ABILITY TO TRANSMIT WATER) SO THAT THE A-ZONE WILL DEWATER OR DRY UP IF EXPOSED TO HIGH GROUNDWATER PUMPING RATES. FOR THIS REASON, THE CLEANUP TIME FROM THE A-ZONE GROUNDWATER IS LIMITED BY THE AMOUNT OF WATER THAT MAY BE PUMPED FROM THE A-ZONE. MODELING HAS SHOWN THAT IF THE A-ZONE IS PUMPED AT ANY GREATER RATE THAN IS CURRENTLY PROPOSED, 27 GALLONS PER MINUTE (GPM) AT INTERSIL AND 7 GPM AT SIEMENS, IT WILL DEWATER AND GROUNDWATER EXTRACTION WILL NO LONGER BE EFFECTIVE EXCEPT FOR THE ONGOING SOIL VAPOR EXTRACTION.

INTERSIL'S ON-SITE ALTERNATIVE NO. 4 CONSIDERED REINJECTION OF GROUNDWATER AT THE SITE TO INCREASE THE PUMPING RATE FROM 2.7 GPM TO 3.3 GPM. THIS DECREASED THE CLEANUP TIME FROM 60 YEARS TO 45 YEARS. HOWEVER, THIS ALTERNATIVE WAS NOT SELECTED DUE TO THE DIFFICULTIES IN CONTROLLING THE REINJECTED WATER AND CONCERNS THAT THE REINJECTION COULD SPREAD THE CONTAMINATION. INTERSIL'S ON-SITE ALTERNATIVE NO. 5 INCREASED THE RATE OF REINJECTION SO THAT THE GROUNDWATER PUMPING RATE COULD BE INCREASED FROM 3.3 GPM TO 7-3 GPM. THIS INCREASED FLOW RATE DECREASED THE CLEANUP TIME FROM 45 YEARS TO 20 YEAR THIS ALTERNATIVE WAS ALSO NOT SELECTED DUE TO THE DIFFICULTIES WITH REINJECTION.

ON-SITE AREA

FOR THE OFF-SITE AREA PROPOSED CLEANUP ALTERNATIVE NO. 3, THE B-ZONE GROUNDWATER IS CURRENTLY PROPOSED TO BE PUMPED AT 105 GPM. THE B-ZONE IS ABLE TO BE PUMPED AT A MUCH HIGHER RATE THAN THE A-ZONE DUE TO THE GREATER PERMEABILITY AND SIZE OF THE B-ZONE. THE B-ZONE IS PROPOSED TO BE PUMPED AT THIS RELATIVELY HIGH RATE IN ORDER TO CAPTURE AND CLEANUP 6-ZONE GROUNDWATER ALSO.

OFF-SITE ALTERNATIVE NO. 4, WHICH WAS NOT RECOMMENDED, PROPOSED TO PUMP THE B-ZONE AT 45 GPM. BY INCREASING THE PUMPING RATE IN THE B-ZONE FROM 45 GPM TO 105 GPM, THE CLEANUP TIME IN THE B-ZONE DECREASES FROM A RANGE OF 20 - 50 YEARS TO A RANGE OF 20 - 45 YEARS. BY DOUBLING THE PUMPING RATE IN THE B-ZONE, ONLY 5 YEARS IS REDUCED FROM THE UPPER RANGE OF PREDICTED CLEANUP TIMES. THIS IS AGAIN DUE TO THE DIFFICULTY IN EXTRACTING THE VOCS FROM THE CLAY SOILS. SOIL GAS EXTRACTION IS NOT FEASIBLE OFF-SITE

GROUNDWATER CONSERVATION IS ALSO CONSIDERED IN SELECTING THE PROPOSED RAP. THE RELATIVELY HIGH PUMPING RATE IN THE B-ZONE HAS TO BE BALANCED AGAINST GROUNDWATER CONSERVATION AND THE CONCERN OF LIMITING WITHDRAWALS FROM THE GROUNDWATER RESOURCES DURING DROUGHT PERIODS.

IN CONCLUSION, THE REGIONAL BOARD STAFF BELIEVE THE PROPOSED ALTERNATIVES COMBINE THE BEST OF EFFECTIVENESS, IMPLEMENTABILITY, GROUNDWATER CONSERVATION, AND TIME TO CLEANUP. PROGRESS REVIEWS WILL BE COMPLETED TO REVIEW PROGRESS AND ACHIEVABILITY AND WILL CONSIDER CHANGES AVAILABLE THAT CAN SPEED CLEANUP.

REGULATORY OVERSIGHT: ADOPTION OF THE SCO REQUIRES PERIODIC REPORTING BY INTERSIL AND SIEMENS ON THEIR ACTIVITIES TO ACHIEVE CLEANUP. THESE REPORTS ARE PUBLIC RECORD AND WILL ALSO BE SENT TO THE CITIES OF SANTA CLARA, CUPERTINO, AND SUNNYVALE. ADDITIONALLY, UNTIL THE SITE IS CLEANED UP TO THE REQUIREMENTS OF THE SCO, THE REGIONAL BOARD AND/OR EPA WILL PROVIDE REGULATORY OVERSIGHT SUPERFUND REQUIRES A FORMAL REVIEW OF THE PROGRESS EVERY 5 YEARS UNTIL CLEANUP. IF THE REGIONAL BOARD IS STILL THE LEAD AGENCY THIS REVIEW WILL BE NOTICED AT LEAST BY PUBLICATION AND DISTRIBUTION OF THE AGENDA FOR THE MEETING WHERE THE BOARD REVIEWS THE CLEANUP PROGRESS, WHERE THE STATUS REPORT AND RECOMMENDATIONS CAN BE OBTAINED FOR REVIEW, AND HOW THE PUBLIC CAN COMMENT ON ANY PROPOSED BOARD ACTIONS IN WRITING OR AT A PUBLIC HEARING. IF THE BOARD AMENDS THE CLEANUP REQUIREMENTS, THIS WOULD ALSO BE DONE WITH PUBLIC NOTICE AT A PUBLIC HEARING IT IS EXPECTED THAT EPA, IF THEY ARE THE LEAD REGULATORY AGENCY, WOULD OFFER THE PUBLIC THE SAME OPPORTUNITIES DURING REVIEWS AND/NOR CHANGES.

ONE COMMENT LETTER SUGGESTED THE COMPANIES SHOULD POST A BOND LARGE ENOUGH TO COVER THE COST OF CLEANUP. THE BOARD HAS NOT MADE THIS A PRACTICE IN THE PAST, INSTEAD RELYING NON ITS ENFORCEMENT AUTHORITY TO REQUIRE COMPLETION OF CLEANUPS. INTERSIL AND SIEMENS HAVE COMPLETED ALL NECESSARY CLEANUP WORK REQUIRED UP UNTIL THIS TIME AND THERE IS NO REASON TO BELIEVE THEY WILL NOT CONTINUE TO DO SO. INTERSIL AND SIEMENS ARE PART OF TWO OF THE BIGGEST COMPANIES IN THE WORLD AND HAVE GIVEN ALLY APPEARANCES THAT THEY ARE DEDICATED TO COMPLETING THE CLEANUP.

INTERSIL/SIEMENS COMMENTS

INTERSIL AND SIEMENS HAVE COMMENTED TWICE ON THE SCO. THE COMMENTS ARE MAINLY WORDING CHANGES TO THE SCO FOR CLARIFICATION THAT DO NOT CHANGE THE INTENT OF THE SCO. MOST OF THEIR COMMENTS HAVE BEEN INCORPORATED INTO THE SCO AND THE COMPANIES DO NOT PLAN TO CONTEST THE SCO.

AMI COMMENTS

AMI STATED THAT ONE FINDING IN THE SCO THAT REFERENCED THE AMI OFF-SITE GROUNDWATER PLUME WAS UNWARRANTED BASED ON THE AVAILABLE DATA. STAFF BELIEVE THE AVAILABLE DATA IS ADEQUATE TO MAKE THE FINDING AND THIS FINDING WAS NOT CHANGED.

ODW, SCVWD AND CITY OF SANTA CLARA COMMENTS

THE ODW DOES NOT AGREE WITH THE EPA SUPERFUND FINAL CLEANUP LEVEL RISK RANGE FOR CARCINOGENS OF (10-4) TO (10-6). THEY ALSO DO NOT AGREE WITH THE USE OF MCLS AS CLEANUP LEVELS WHEN MORE THAN ONE CHEMICAL IS PRESENT AT A SITE. ODW RECOMMENDS THE USE OF A CARCINOGENIC HAZARD INDEX (CHI) OF NONE NOR A (10-6) CARCINOGENIC RISK LEVEL AS CLEANUP LEVELS WHENEVER THIS LEVEL OF PROTECTION CAN BE ACCOMPLISHED WITH REASONABLE AND COST EFFECTIVE OPERATIONAL MEASURES. SCVWD AND THE CITY OF SANTA CLARA HAVE RECOMMENDED USING A (10-6) CARCINOGENIC RISK LEVEL AS A CLEANUP STANDARD FOR CURRENTLY USED DRINKING WATER ZONES. THE SCVWD AND CITY OF SANTA CLARA RECOMMENDATIONS ARE APPARENTLY BASED ON THEIR CONCERN THAT DHS WILL BE PROMULGATING RECOMMENDED PUBLIC HEALTH LEVELS (RPHL) FOR CHEMICALS IN DRINKING WATER THAT WILL BE SET AT THE (10-6) RISK LEVEL FOR EACH CHEMICAL.

STAFF DISAGREES WITH ODW'S USE OF THE CHI AND THE (10-6) CARCINOGENIC RISK LEVEL AS CLEANUP STANDARDS BECAUSE BOTH ARE INCONSISTENT WITH EPA STANDARDS CONTAINED IN THE NATIONAL OIL AND

HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (NCP), 40 CFR PART 300, MARCH 8,1990, THE SUPERFUND PUBLIC HEALTH EVALUATION MANUAL (SPHEM), (EPA, 1986), THE RISK ASSESSMENT GUIDANCE FOR SUPERFUND, HUMAN HEALTH EVALUATION MANUAL (RAGS), (EPA, 1989), AND THE GUIDANCE FOR CONDUCTING REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES UNDER CERCLA, (EPA, 1988).

BY USING ODW'S CHI WITH MAXIMUM CONTAMINANT LEVELS (MCLS) IN THE DENOMINATOR, A DIFFERENT RISK LEVEL FOR CLEANUP IS OBTAINED WITH EACH DIFFERENT SUITE OF CHEMICAL BY USING ODW'S CHI OF ONE, STAFF WOULD BE ADVOCATING CLEANUP AT THE DIFFERENT SUPERFUND SITES TO VARIABLE RISK LEVELS WITH NO TECHNICAL OR ECONOMIC BASIS FOR THESE DECISIONS STAFF BELIEVES THIS IS POOR RISK MANAGEMENT AND RISK COMMUNICATION.

ODW CITES THE TECHNICAL AND ECONOMIC ANALYSIS THAT WENT INTO PROMULGATION OF MCLS AS ONE BASIS FOR USING MCLS IN THE DENOMINATOR OF THEIR CHI. HOWEVER, THESE TECHNICAL AND ECONOMIC EVALUATIONS USED FOR PROMULGATING MCLS ARE COMPLETELY DIFFERENT THAN THE TECHNICAL AND ECONOMIC EVALUATIONS MADE IN REMEDIATING VOLATILE ORGANIC COMPOUNDS (VOCS) FROM SAND AND CLAY AQUIFERS. FOR THE INTERSIL/SIEMENS SITE, THE TIME NECESSARY TO ACHIEVE CLEANUP AT THIS SITE IS CURRENTLY MODELED AT 45 TO 85 YEARS AND THE 30-YEAR PRESENT WORTH COST IS 519 MILLION. SUPERFUND REQUIRES THAT AN INDEPENDENT RISK-BASED ANALYSIS OF CLEANUP LEVELS BE COMPLETED FOR EACH SUPERFUND SITE. NO MENTION OF A CHI IS MADE IN EITHER EPA SUPERFUND GUIDELINES, AND THESE GUIDELINES DO CONTAIN PROCEDURES THAT ADDRESS THE ADDITIVE EFFECTS OF MULTIPLE CHEMICALS AND MULTIPLE EXPOSURE PATHWAYS WHICH APPEAR TO BE ODW'S MAIN CONCERNS.

IN REGARDS TO THE RPHLS, THEY ARE CURRENTLY PROMULGATED AND THEREFORE MAY NOT BE USED AS CLEANUP STANDARDS. THE LAW ESTABLISHING RPHLS ALSO DID NOT SET A SPECIFIC RISK LEVEL (E.G. (10-6)); THESE LEVELS WILL BE SET IN REGULATIONS BY DHS BY MID-1991. UPON PROMULGATION OF RPHLS, THEY WILL BE EVALUATED FOR USE AS APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (AAARS) FOR CLEANUP STANDARDS.

BECAUSE OF THE INCONSISTENCIES AND DIFFERENCES BETWEEN THE EPA AND ODW PROCEDURES, STAFF BELIEVES EPA RECOMMENDED RISK MANAGEMENT AND RISK COMMUNICATION TECHNIQUES SHOULD BE FOLLOWED FOR ALL REGIONAL BOARD LEAD CLEANUP SITES

THE SCO ALSO CONTAINS TASKS TO REEVALUATE CLEANUP LEVELS BASED ON NEW TECHNICAL OR HEALTH INFORMATION. IF ODW'S RECOMMENDATIONS SHOULD BECOME CODIFIED IN LAW OR REGULATIONS, THEN THE SCO COULD BE MODIFIED TO INCLUDE THE NEW STANDARDS.

NOTWITHSTANDING STAFFS' RECOMMENDATION TO FOLLOW ALL EPA RECOMMENDED RISK ASSESSMENT AND MANAGEMENT PROCEDURES, THE ODW CHI WOULD BE ONE FOR THE C-ZONE, ODW'S PRIMARY ZONE OF INTEREST SINCE IT IS APPARENTLY USED AS A DRINKING WATER SOURCE IN THE VALLEY. THE CHI WOULD BE ONE BECAUSE THERE IS ONLY ONE ODW RECOGNIZED CARCINOGEN, TCE, IN THE C-ZONE. ALSO, DEPENDING ON THE METHODS USED TO PREDICT CLEANUP AND RISK (SIEMENS AND INTERSIL USED SLIGHTLY DIFFERENT METHODS), ODW'S, SCVWD'S AND THE CITY OF SANTA CLARA'S GOAL OF A (10-6) RISK LEVEL MAY ALSO BE MET AT THIS SITE UNDER THE CURRENT CLEANUP PLAN. WHICH OF THE METHODS FOR PREDICTING CLEANUP IS MORE ACCURATE WILL NOT BE KNOWN FOR MANY YEARS, BASED ON PREDICTED AND ACTUAL PERFORMANCES. FINALLY, THE DIFFERENCES IN CLEANUP LEVELS BETWEEN WHAT THE SCO CALLS FOR AND ODW RECOMMENDS ARE IN THE ORDER OF 5 PPB VS 2 PPB. THESE DIFFERENCES ARE DIFFICULT TO MEASURE, LET ALONE ACHIEVE, WITH CURRENT TECHNOLOGY.

GROUNDWATER PUMPING FROM THE C-ZONE

ALTERNATIVES 4 AND 5 IN THE OFF-SITE FS AND IN THE SCO INCLUDED A GROUNDWATER EXTRACTION WELL(S) SCREENED IN THE C-ZONE. THESE ALTERNATIVES WERE NOT SELECTED BECAUSE OF THE ADVERSE COMMUNITY IMPACTS INVOLVED IN THE INSTALLATION OF AN ADDITIONAL GROUNDWATER PIPELINE ON REDWING AVE. AND BECAUSE OF PUMP TESTS AND MODELLING THAT SHOWED THAT THE C-ZONE WOULD BE REMEDIATED THROUGH PUMPING IN THE B-ZONE. REMEDIATION OF THE C-ZONE IS AS HIGH A PRIORITY OF THE RAP AS REMEDIATION OF THE A- AND B-ZONES. IF A REDUCTION IN C-ZONE CONCENTRATIONS IS NOT DEMONSTRATED AFTER ONE YEAR, THE PLAN CONTAINS A CONTINGENCY FOR THE INSTALLATION OF C-ZONE EXTRACTION WELL(S). THE TIME TO ACHIEVE CLEANUP AND THE COST FOR ALTERNATIVES 4 AND 5 WERE SIMILAR TO THAT OF THE SELECTED ALTERNATIVE, ALTERNATIVE 3.

NO CHANGES ARE RECOMMENDED TO THE RAP OR THE SCO IN RESPONSE TO DHS, SCVWD OR CITY OF SANTA CLARA COMMENTS.